

UDK 37

ISSN 2545 - 4439

ISSN 1857 - 923X

INTERNATIONAL JOURNAL

Institute of Knowledge Management

KNOWLEDGE



Scientific Papers

MEDICAL SCIENCES AND HEALTH

Vol. 30. 4.

KIJ

Vol. 30

No. 4

pp. 707 - 1084

Skopje 2019

Global Impact & Quality Factor **1.822 (2017)** <http://globalimpactfactor.com/knowledge-international-journal/>

KNOWLEDGE



INTERNATIONAL JOURNAL

SCIENTIFIC PAPERS
VOL.30.4

Promoted in Vrnjacka Banja, Serbia
March, 2019



KNOWLEDGE

International Journal Scientific papers Vol. 30.4

ADVISORY BOARD

Vlado Kambovski PhD, Robert Dimitrovski PhD, Siniša Zarić PhD, Maria Kavdanska PhD, Venelin Terziev PhD, Mirjana Borota – Popovska PhD, Cezar Birzea PhD, Ljubomir Kekenovski PhD, Veselin Videv PhD, Ivo Zupanovic, PhD, Savo Ashtalkoski PhD, Zivota Radosavljević PhD, Laste Spasovski PhD, Mersad Mujevic PhD, Nonka Mateva PhD, Rositsa Chobanova PhD, Predrag Trajković PhD, Dzulijana Tomovska PhD, Nedžad Korajlić PhD, Nebojsa Pavlović PhD, Nikolina Ognenska PhD, Baki Koleci PhD, Lisen Bashkurti PhD, Trajce Dojcinovski PhD, Jana Merdzanova PhD, Zoran Srzentić PhD, Nikolai Sashkov Cankov PhD, Marija Kostic PhD

Print: GRAFOPROM – Bitola

Editor: IKM – Skopje

Editor in chief

Robert Dimitrovski, PhD

KNOWLEDGE - International Journal Scientific Papers Vol. 30.4

ISSN 1857-923X (for e-version)

ISSN 2545 – 4439 (for printed version)

INTERNATIONAL EDITORIAL BOARD

President: Academic, Prof. Vlado Kambovski PhD, Skopje (Macedonia)

Vice presidents:

Prof. Robert Dimitrovski PhD, Institute of Knowledge Management, Skopje (Macedonia)

Prof. Sinisa Zaric, PhD, Faculty of Economics, University of Belgrade, Belgrade (Serbia)

Prof. Venelin Terziev PhD, University of Rousse, Rousse (Bulgaria)

Prof. Mersad Mujevic PhD, Public Procurement Administration of Montenegro (Montenegro)

Prof. Tihomir Domazet PhD, President of the Croatian Institute for Finance and Accounting, Zagreb (Croatia)

Members:

- Prof. Aleksandar Korablev PhD, Dean, Faculty for economy and management, Saint Petersburg State Forest Technical University, Saint Petersburg (Russian Federation)
- Prof. Azra Adjajlic – Dedovic PhD, Faculty of criminology and security, Sarajevo (Bosnia & Herzegovina)
- Prof. Anita Trajkovska PhD, Rochester University (USA)
- Prof. Anka Trajkovska-Petkoska PhD, UKLO, Faculty of technology and technical sciences, Bitola (Macedonia)
- Prof. Alisabri Sabani PhD, Faculty of criminology and security, Sarajevo (Bosnia & Herzegovina)
- Prof. Ahmad Zakeri PhD, University of Wolverhampton, (United Kingdom)
- Prof. Ana Dzumalieva PhD, South-West University “Neofit Rilski”, Blagoevgrad (Bulgaria)
- Prof. Aziz Pollozhani PhD, Rector, University Mother Teresa, Skopje (Macedonia)
- Prof. Branko Sotirov PhD, University of Rousse, Rousse (Bulgaria)
- Prof. Branko Boshkovic, PhD, College of Sports and Health, Belgrade (Serbia)
- Prof. Branimir Kampl PhD, Institute SANO, Zagreb (Croatia)
- Prof. Baki Koleci PhD, University Hadzi Zeka, Peja (Kosovo)
- Prof. Branislav Simonovic PhD, Faculty of Law, Kragujevac (Serbia)
- Prof. Bistra Angelovska, Faculty of Medicine, University “Goce Delcev”, Shtip (Macedonia)
- Prof. Cezar Birzea, PhD, National School for Political and Administrative Studies, Bucharest (Romania)
- Prof. Cvetko Andreevski, Dean, Faculty of Tourism, UKLO, Bitola (Macedonia)
- Prof. Drago Cvijanovic, PhD, Faculty of Hotel Management and Tourism, University of Kragujevac, Vrnjacka Banja (Serbia)
- Prof. Dusan Ristic, PhD Emeritus, College of professional studies in Management and Business Communication, Novi Sad (Serbia)
- Prof. Dimitar Radev, PhD, Rector, University of Telecommunications and Post, Sofia (Bulgaria)
- Prof. Daniela Todorova PhD, Rector of “Todor Kableshkov” University of Transport, Sofia (Bulgaria)
- Prof. Dragan Kokovic PhD, University of Novi Sad, Novi Sad (Serbia)
- Prof. Dragan Marinkovic PhD, High health – sanitary school for professional studies, Belgrade (Serbia)
- Prof. Daniela Ivanova Popova PhD, Faculty of Public Health and Sport, SWU Neofit Rilski, Blagoevgrad (Bulgaria)
- Prof. Dzulijana Tomovska, PhD, Dean, Faculty of Biotechnical sciences, Bitola (Macedonia)
- Prof. Evgenia Penkova-Pantaleeva PhD, UNWE -Sofia (Bulgaria)

-
- Prof. Fadil Millaku, PhD, Rector, University “Hadzi Zeka”, Peja (Kosovo)
 - Prof. Fatos Ukaj, University “Hasan Prishtina”, Prishtina (Kosovo)
 - Prof. Georgi Georgiev PhD, National Military University “Vasil Levski”, Veliko Trnovo (Bulgaria)
 - Prof. Halit Shabani, PhD, University “Hadzi Zeka”, Peja (Kosovo)
 - Prof. Halima Sofradzija, PhD, University of Sarajevo, Sarajevo (Bosnia and Herzegovina)
 - Prof. Haris Halilovic, Faculty of criminology and security, University of Sarajevo, Sarajevo (Bosnia and Herzegovina)
 - Prof. Helmut Shramke PhD, former Head of the University of Vienna Reform Group (Austria)
 - Prof. Hristina Georgieva Yancheva, PhD, Rector, Agricultural University, Plovdiv (Bulgaria)
 - Prof. Hristo Beloev PhD, Bulgarian Academy of Science, Rector of the University of Rousse (Bulgaria)
 - Prof. Hristina Milcheva, Medical college, Trakia University, Stara Zagora (Bulgaria)
 - Prof. Izet Zeqiri, PhD, Academic, SEEU, Tetovo (Macedonia)
 - Prof. Ivan Marchevski, PhD, Rector, D.A. Tsenov Academy of Economics, Svishtov (Bulgaria)
 - Doc. Igor Stubelj, PhD, PhD, Faculty of Management, Primorska University, Koper (Slovenia)
 - Prof. Ivo Zupanovic, PhD, Faculty of Business and Tourism, Budva (Montenegro)
 - Prof. Ivan Petkov PhD, Rector, European Polytechnic University, Pernik (Bulgaria)
 - Prof. Isa Spahiu PhD, AAB University, Prishtina (Kosovo)
 - Prof. Ivana Jelik PhD, University of Podgorica, Faculty of Law, Podgorica (Montenegro)
 - Prof. Islam Hasani PhD, Kingston University (Bahrein)
 - Prof. Jova Ateljevic PhD, Faculty of Economy, University of Banja Luka, (Bosnia & Herzegovina)
 - Prof. Jove Kekenovski PhD, Faculty of Tourism, UKLO , Bitola (Macedonia)
 - Prof. Jonko Kunchev PhD, University „Cernorizec Hrabar“ - Varna (Bulgaria)
 - Prof. Jelena Stojanovic PhD, High medicine school for professional studies “Hipokrat”, Bujanovac (Serbia)
 - Prof Karl Schopf, PhD, Akademie fur wissenschaftliche forchung und studium, Wien (Austria)
 - Prof. Katerina Belichovska, PhD, Faculty of Agricultural Sciences, UKIM, Skopje (Macedonia)
 - Prof. Krasimir Petkov, PhD, National Sports Academy “Vassil Levski”, Sofia (Bulgaria)
 - Prof. Kamal Al-Nakib PhD, College of Business Administration Department, Kingdom University (Bahrain)
 - Prof. Kiril Lisichkov, Faculty of Technology and Metallurgy, UKIM, Skopje (Macedonia)
 - Prof. Lidija Tozi PhD, Faculty of Pharmacy, Ss. Cyril and Methodius University, Skopje (Macedonia)
 - Prof. Laste Spasovski PhD, Vocational and educational centre, Skopje (Macedonia)
 - Prof. Larisa Velic, PhD, Faculty of Law, University of Zenica, Zenica (Bosnia and Herzegovina)
 - Prof. Lujza Grueva, PhD, Faculty of Medical Sciences, UKIM, Skopje (Macedonia)
 - Prof. Lazar Stosic, PhD, Association for development of science, engineering and education, Vranje (Serbia)
 - Prof. Lisen Bashkurti PhD, Global Vice President of Sun Moon University (Albania)
 - Prof. Lence Mircevska PhD, High Medicine School, Bitola, (Macedonia)
 - Prof. Ljubomir Kekenovski PhD, Faculty of Economics, UKIM, Skopje (Macedonia)
 - Prof. Ljupce Kocovski PhD, Faculty of Biotechnical sciences, Bitola (Macedonia)

-
- Prof. Marusya Lyubcheva PhD, University “Prof. Asen Zlatarov”, Member of the European Parliament, Burgas (Bulgaria)
 - Prof. Maria Kavdanska PhD, Faculty of Pedagogy, South-West University Neofit Rilski, Blagoevgrad (Bulgaria)
 - Prof. Maja Lubenova Cholakova PhD, Faculty of Public Health and Sport, SWU Neofit Rilski, Blagoevgrad (Bulgaria)
 - Prof. Mirjana Borota-Popovska, PhD, Centre for Management and Human Resource Development, Institute for Sociological, Political and Juridical Research, Skopje (Macedonia)
 - Prof. Mihail Garevski, PhD, Institute of Earthquake Engineering and Engineering Seismology, Skopje (Macedonia)
 - Prof. Misho Hristovski PhD, Faculty of Veterinary Medicine, Ss. Cyril and Methodius University, Skopje (Macedonia)
 - Prof. Mitko Kotovchevski, PhD, Faculty of Philosophy, UKIM, Skopje (Macedonia)
 - Prof. Milan Radosavljevic PhD, Dean, Faculty of strategic and operational management, Union University, Belgrade (Serbia)
 - Prof. Marija Topuzovska-Latkovikj, PhD, Centre for Management and Human Resource Development, Institute for Sociological, Political and Juridical Research, Skopje (Macedonia)
 - Prof. Marija Knezevic PhD, Academic, Banja Luka, (Bosnia and Herzegovina)
 - Prof. Margarita Bogdanova PhD, D.A.Tsenov Academy of Economics, Svishtov (Bulgaria)
 - Prof. Mahmut Chelik PhD, Faculty of Philology, University “Goce Delchev”, Shtip (Macedonia)
 - Prof. Marija Mandaric PhD, Faculty of Hotel Management and Tourism, University of Kragujevac, Vrnjacka Banja (Serbia)
 - Prof. Marina Simin PhD, College of professional studies in Management and Business Communication, Sremski Karlovci (Serbia)
 - Prof. Miladin Kalinic, College of professional studies in Management and Business Communication, Sremski Karlovci (Serbia)
 - Prof. Mitre Stojanovski PhD, Faculty of Biotechnical sciences, Bitola (Macedonia)
 - Prof. Miodrag Smelcerovic PhD, High Technological and Artistic Vocational School, Leskovac (Serbia)
 - Prof. Nadka Kostadinova, Faculty of Economics, Trakia University, Stara Zagora (Bulgaria)
 - Prof. Natalija Kirejenko PhD, Faculty For economic and Business, Institute of Entrepreneurial Activity, Minsk (Belarus)
 - Prof. Nenad Taneski PhD, Military Academy “Mihailo Apostolski”, Skopje (Macedonia)
 - Prof. Nevenka Tatkovic PhD, Juraj Dobrila University of Pula, Pula (Croatia)
 - Prof. Nedžad Korajlic PhD, Dean, Faculty of criminal justice and security, University of Sarajevo (Bosnia and Herzegovina)
 - Prof. Nikolay Georgiev PhD, “Todor Kableshev” University of Transport, Sofia (Bulgaria)
 - Prof. Nikolina Ognenska PhD, Faculty of Music, SEU - Blagoevgrad (Bulgaria)
 - Prof. Nishad M. Navaz PhD, Kingdom University (India)
 - Prof. Oliver Iliev PhD, Faculty of Communication and IT, FON University, Skopje (Macedonia)
 - Prof. Oliver Dimitrijevic PhD, High medicine school for professional studies “Hipokrat”, Bujanovac (Serbia)
 - Prof. Paul Sergius Koku, PhD, Florida State University, Florida (USA)
 - Prof. Primoz Dolenc, PhD, Faculty of Management, Primorska University, Koper (Slovenia)
 - Prof. Predrag Trajkovic PhD, JMPNT, Vranje (Serbia)
 - Prof. Petar Kolev PhD, “Todor Kableshev” University of Transport, Sofia (Bulgaria)
 - Prof. Pere Tumbas PhD, Faculty of Economics, University of Novi Sad, Subotica (Serbia)

-
- Prof. Rade Ratkovic PhD, Faculty of Business and Tourism, Budva (Montenegro)
 - Prof. Rositsa Chobanova PhD, University of Telecommunications and Posts, Sofia (Bulgaria)
 - Prof. Rumen Valcovski PhD, Imunolab Sofia (Bulgaria)
 - Prof. Rumen Stefanov PhD, Dean, Faculty of public health, Medical University of Plovdiv (Bulgaria)
 - Prof. Sasho Korunoski, Rector, UKLO, Bitola (Macedonia)
 - Prof. Sashko Plachkov PhD, Faculty of Pedagogy, University Neofit Rilski, Blagoevgrad (Bulgaria)
 - Prof. Snezhana Lazarevic, PhD, College of Sports and Health, Belgrade (Serbia)
 - Prof. Stojan Ivanov Ivanov PhD, Faculty of Public Health and Sport, SWU Neofit Rilski, Blagoevgrad (Bulgaria)
 - Prof. Snezana Stoilova, PhD, High Medicine School, Bitola, (Macedonia)
 - Prof. Stojna Ristevska PhD, High Medicine School, Bitola, (Macedonia)
 - Prof. Suzana Pavlovic PhD, High health – sanitary school for professional studies, Belgrade (Serbia)
 - Prof. Sandra Zivanovic, PhD, Faculty of Hotel Management and Tourism, University of Kragujevac, Vrnjacka Banja (Serbia)
 - Prof. Shyqeri Kabashi, College “Biznesi”, Prishtina (Kosovo)
 - Prof. Trayan Popkochev PhD, Faculty of Pedagogy, South-West University Neofit Rilski, Blagoevgrad (Bulgaria)
 - Prof. Todor Krystevich, Vice Rector, D.A. Tsenov Academy of Economics, Svishtov (Bulgaria)
 - Prof. Todorka Atanasova, Faculty of Economics, Trakia University, Stara Zagora (Bulgaria)
 - Doc. Tatyana Sobolieva PhD, State Higher Education Establishment Vadiym Getman Kiyev National Economic University, Kiyev (Ukraine)
 - Prof. Tzako Pantaleev PhD, NBUniversity, Sofia (Bulgaria)
 - Prof. Violeta Dimova PhD, Faculty of Philology, University “Goce Delchev”, Shtip (Macedonia)
 - Prof. Volodymyr Denysyuk, PhD, Dobrov Center for Scientific and Technological Potential and History studies at the National Academy of Sciences of Ukraine (Ukraine)
 - Prof. Valentina Staneva PhD, “Todor Kableshev” University of Transport, Sofia (Bulgaria)
 - Prof. Vasil Zecev PhD, College of tourism, Blagoevgrad (Bulgaria)
 - Prof. Venus Del Rosario PhD, Arab Open University (Philippines)
 - Prof. Yuri Doroshenko PhD, Dean, Faculty of Economics and Management, Belgorod (Russian Federation)
 - Prof. Zlatko Pejkov, PhD, Faculty of Agricultural Sciences, UKIM, Skopje (Macedonia)
 - Prof. Zivota Radosavljevic PhD, Dean, Faculty FORCUP, Union University, Belgrade (Serbia)
 - Prof. Zorka Jugovic PhD, High health – sanitary school for professional studies, Belgrade (Serbia)

REVIEW PROCEDURE AND REVIEW BOARD

Each paper is reviewed by the editor and, if it is judged suitable for this publication, it is then sent to two referees for double blind peer review.

The editorial review board is consisted of 45 members, full professors in the fields 1) Natural and mathematical sciences, 2) Technical and technological sciences, 3) Medical sciences and Health, 4) Biotechnical sciences, 5) Social sciences, and 6) Humanities from all the Balkan countries and the region.

Contents

ANTICANCER MONOCLONAL ANTIBODIES AND THEIR RADIOIMMUNOCONJUGATES - GATEWAY TO THE MORE SUCCESSFUL THERAPY.....	725
Marija Sterjova Arev.....	725
Emilija Janevik-Ivanovska.....	725
PLASMA CORTISOL LEVELS IN HEROIN ADDICTS	733
Aneta Spasovska Trajanovska	733
Danijela Janicevic Ivanovska.....	733
ANALYSIS OF THE MECHANISM OF ACTION AND THE ANTIMICROBIAL ACTIVITY OF CERTAIN ANTISEPTICS AND DISINFECTANTS AGAINST <i>BACILLUS SPP.</i> , <i>ACINETOBACTER</i> <i>SPP.</i> , <i>KLEBSIELLA SPP.</i> , <i>SERRATIA MARCESCENS</i> AND <i>CANDIDA SPP.</i> AS ONE OF THE MOST COMMON CAUSES OF INTRA–HOSPITAL INFECTIONS	739
Biljana Gjorgjeska	739
Dino Karpicarov.....	739
ELECTRONEGATIVE LOW-DENSITY LIPOPROTEINS AS A CAUSE OF SECONDARY CARDIOVASCULAR DISEASES IN CHRONICALLY ILL PATIENTS – A METHOD FOR IDENTIFICATION AND MONITORING	747
Ivana Tusheva	747
Mishko Milev	747
Gordana Kamceva Mihailova	747
Manuela Maneva.....	747
Tatjana Ruskovska	747
IMPACT OF ARTERIAL HYPERTENSION ON ATRIAL FIBRILLATION.....	753
Antoniya Kisheva.....	753
ROLE OF TRANSCRANIAL DOPPLER FOR ASSESSMENT OF PERSISTENT FORAMEN OVALE IN PATIENTS WITH STROKE.....	757
Antoniya Kisheva.....	757
ORGANIZATIONAL STRUCTURE OF AN INTEGRATIVE MODEL FOR CONTROL OF SUGAR DIABETES AND PREVENTION OF ITS CONDITIONS	761
Varvara Pancheva	761
HEALTH CARE IN LATE COMPLICATIONS OF DIABETES - NEUROPATHIC DIABETIC FOOT	765
Petya Kasnakova.....	765
Yovana Todorovska	765
Silvija Madzovska.....	765
Anna Mihaylova.....	765
COMPLEX OF REHABILITATION MEETINGS INCREASING HEALTHY WELFARE IN PATIENTS WITH SUGAR DIABETES	771
Varvara Pancheva	771
Snezhina Georgieva	771
IMPROVING THE MODEL OF HEALTH CARE FOR SUGAR DIABETES (SD)	775
Varvara Pancheva	775
CHRONIC NON-INFECTIOUS DISEASES - A CHALLENGE FOR THE MEDICAL TEAM IN OUTPATIENT CARE	779
Ivanka Stambolova.....	779
Stefan Stambolov	779

INNOVATIVE APPROACHES IN THERAPY OF NEURODEGENERATIVE DISEASES THROUGH USE OF CYCLODEXTRINES	785
Daniel Argilashki	785
Nina Koleva	785
Bozhidarka Hadzhieva	785
THE IMPORTANCE OF THE DIAGNOSIS AND TREATMENT OF LATENT TUBERCULOSIS INFECTION ON THE TUBERCULOSIS CONTROL	793
Ljiljana Simonovska	793
Iva Paneva	793
SENSORY INTEGRATIVE APPROACH IN CHILDREN FROM INFANCY TO PRESCHOOL AGE – GUIDELINES FOR PREVENTION, EARLY DIAGNOSIS AND INTERVENTION AT FIRST SIGNS OF SENSORY INTEGRATIVE DYSFUNCTION	799
Stela Marinkova	799
HUMAN BRUCELLOSIS IN REPUBLIC OF MACEDONIA IN THE PERIOD 2008 – 2017	805
Meri Nikolova-Giceva	805
Gjorgji Shumanov	805
Gordana Panova	805
INCIDENCE OF PTERYGIUM IN EASTERN MACEDONIA FOR 2018	811
Strahil Gazepov	811
Alen Gorgiev	811
OVERVIEW OF THE THEORIES OF POSTPARTUM DEPRESSION	815
Daniela Gavrailova	815
Delyna Hadzhideleva	815
SATISFACTION AND SELF-ASSESSMENT OF THE EMPLOYMENT RELATIONSHIP IN THE PRACTICE OF THE OBSTETRIC PROFESSION IN HOSPITAL CONDITIONS	821
Svetlana Radeva	821
Lora Georgieva	821
THE PROBLEM RELATED TO JUVENILE AND TEEN MOTHERS THROUGH THE EYES OF THE GENERAL PRACTITIONERS	827
Marieta Gunovska	827
IMPLEMENTING OPTIMISATION OF MEDICAL EXPOSURE IN CLINICAL PRACTICE AT THE INSTITUTE OF RADIOLOGY, SKOPJE, MACEDONIA	835
Sonja Nikolova	835
CONTEMPORARY METHODS FOR EVALUATION AND COLOR SELECTION FOR CERAMIC PROSTHETIC CONSTRUCTIONS	843
Aneta Mijoska	843
Gordana Kovachevska	843
FLEXIBLE POLYMER DENTURES - CONTEMPORARY SOLUTIONS FOR SUPERIOR ESTHETIC AND COMFORT	851
Gordana Kovacevska	851
Aneta Mijoska	851
CORELLATION BETWEEN THE POSITION OF THE IMPACTED TOOTH AND THE SURGICAL TECHNIQUE IN EXTRACTION OF THIRD MANDIBULAR MOLARS	859
Pisevska Cholakova Natasha	859
Mencheva Zaklina	859
Apostolova Gordana	859
Terzievska Aneta	859

FUNCTION OF SALIVA AT PATIENTS WITH COMPLETE DENTURES. AN OVERVIEW	867
Natasha Stavreva.....	867
MUCOGRAFT: 3D COLAGEN MATRIX FOR SOLVING GINGIVAL RECESSIONS	871
Zaklina Menceva.....	871
Biljana Evrosimovska	871
Aneta Terzievska	871
Daniela Veleska Stevkovska.....	871
T-SCAN IN ORTHODONTICS, CONTEMPORARY OCCLUSAL ANALYSIS	877
Ana Radeska – Panovska	877
Mira Jankulovska	877
USAGE OF INTERDENTAL BRUSHES IN EVERYDAY STUDENTS' ORAL HYGIENE	881
Cena Dimova	881
DIFFERENT GROUP OF TOOTH IN RELATION OF ENDODONTIC TREATMENT	885
Ivona Kovacevska.....	885
Natasa Longurova	885
Katerina Zlatanovska	885
ALVEOLA STORAGE FOR BUILDING OF DENTAL IMPLANTS WITH RESORBA® DENTAL	893
Biljana Dodevska	893
MONOLITHIC LITHIUM-DISILICATE GLASS-CERAMIC RESTORATIONS	895
Julija Zarkova Atanasova.....	895
Sandra Atanasova.....	895
PREPOSITION FOR NEW CLASSIFICATION OF ORAL MUCOSAL CHANGES.....	901
Mihajlo Petrovski.....	901
Cena Dimova	901
Olivera Terzieva- Petrovska	901
MEASUREMENT IS ONLY THE FIRST STEP IN QUALITY MANAGEMENT	907
Mitko Ivanovski	907
ANALYSIS AND INVESTIGATION THE OPINION OF NURSES AND PHYSIOTHERAPISTS ON THEIR QUALITY OF WORK WITH CHRONIC VASCULAR DISEASE'S PATIENTS.....	915
Milan Tsekov	915
Mihaela Mireva.....	915
Mariana Albert	915
ACTIVITIES OF THE MEDICAL NURSES IN THE KARIL DEPARTMENT	921
Ruzica Madzarova	921
Gordana Panova	921
NECESSITY OF PROFESSIONAL COMPETENCE OF HEALTHCARE SPECIALISTS AT THE TREATMENT OF PATIENTS WITH BURNS.....	931
Anushka Dimitrova.....	931
ASSESSMENT OF EFFECTIVENESS BETWEEN TWO PREOPERATIVE REHABILITATION PROGRAMS FOR HERNIATED DISC	939
Kristijan Garevski	939
Toshe Krste	939
Gordana Panova	939
FORMATING THE COMPETENCE OF THE STUDENTS OF THE "MIDWIFERY" SPECIALTY DURING THE PRACTICAL TRAINING	947
Svetlana Radeva.....	947
Lora Georgieva	947

LEADING ROLE OF CLINICAL PRACTICE FOR THE FORMING OF PROFESSIONAL SKILLS IN MEDICAL LABORATORY ASSISTANTS	953
Pavlina Teneva.....	953
Petya Tancheva	953
THE MANIFESTATION OF EMPATHY AND ITS DEVELOPMENT DURING THE TRAINING OF HEALTHCARE SPECIALISTS.....	959
Zhulieta Gerenova.....	959
Todor Dimitrov	959
THE ROLE OF THE NURSE IN MEDICAL CARE AND TREATMENT OF PATIENTS AT THE INTENSIVE TREATMENT DEPARTMENT.....	963
Angela Ilievska Jovanovska.....	963
Gordana Panova	963
METHODS OF EVALUATION OF PERFORMANCE OF EMPLOYEES IN HEALTH INSTITUTIONS	973
Mitko Ivanovski	973
Lidija Naumovska.....	973
CHEST DEVELOPMENT AT BABIES INVOLVED IN SWIMMING ACTIVITIES.....	979
Bilyana Rangelova.....	979
OSTEOPOROSIS – THE SILENT EPIDEMIC	983
Mariyana Petrova.....	983
Anushka Uzunova.....	983
Krasimira Takucheva	983
EFFECTS OF ACUPUNCTURE IN THE TREATMENT OF DISTORTION OF THE ARTICULATIO TALOCRURALIS	989
Lence Nikolovska	989
Evgenija Bojcevska.....	989
THE ROLE OF COMPLEX REHABILITATION IN THE MAINTENANCE AND TREATMENT OF COCSARTROSIS.....	995
Nedyalka Kosturkova.....	995
APPLICATION OF PHYSICAL EXCERCISES FOR PREVENTION AND TREATMENT OF SCOLIOSIS	1001
Tsvetan Mozakov.....	1001
Petya Kasnakova.....	1001
Anna Mihaylova.....	1001
MANUAL APPROACHES AND ANALYTICAL EXERCISES PERFORMED WITH A TOOL FOR TREATMENT OF LUMBO-SACRAL PART OF THE SPINE.....	1007
Svetla Shopova.....	1007
POSSIBILITIES FOR COMBINING KINESITHERAPEUTIC WITH OTHER METHODS OF TREATMENT IN PATIENTS WITH CERVICAL SPINE PAIN.....	1011
Tony Gjuzeleva.....	1011
Katya Mollova	1011
Nazife Bekir	1011
ANALYTICAL MANUAL TRAINING TECHNIQUES FOR M. SERRATUS ANTERIOR	1017
Jordan Gavrailov.....	1017
METHODS OF PHYSIOTHERAPY FOR STUDY IN A SPINAL INSULT	1021
Daniela Popova	1021
Mariela Filipova.....	1021

MIOFACIAL TECHNIQUES FOR IMPACT ON M. ERECTOR SPINAE WITH A SET OF HEALING MASSAGE TOOLS	1023
Svetla Shopova.....	1023
TYPES OF MASSAGE APPROACHES FOR IMPACT ON M. SUBSCAPULARIS	1027
Jordan Gavrilov.....	1027
DETERMINING SUBGROUPS OF PEOPLE WHO STUTTER WITH DIADOCHOKINETIC PRODUCTIONS AND FUNCTIONAL PARAMETERS	1031
Elka Goranova	1031
Stoyan R. Vezekov.....	1031
Dafina Kostadinova	1031
THE ACADEMIC FORMATION OF NEW LOGOPEDIANS IN ALBANIAN MEDICAL FACULTIES	1037
Aurela Basha.....	1037
Lidra Ballhysa.....	1037
ROLE AND PLACE OF EGIS PHARMACEUTICALS PLC FOR THE VIABILITY OF THE HUMAN FACTOR.....	1043
Petar Tishkov	1043
SUGGESTIVE APPROACHES IN PHARMACEUTICAL COMMERCIALS	1051
Nezabravka Nenkov	1051
DEINSTITUTIONALIZATION AND LIFE IN COMMUNITY FOR PEOPLE WITH MENTAL RETARDATION	1057
Veronika Spasova	1057
NORMATIVE REGULATION OF SOCIAL SERVICES PROVIDED IN THE COMMUNITY AND IN SPECIALIZED INSTITUTIONS FOR PEOPLE AGED 65 YEARS AND OVER IN BULGARIA ...	1063
Galina Haralanova	1063
Lora Georgieva	1063
THE NEED TO IMPLEMENT INTEGRATED SOCIAL-HEALTH SERVICES	1067
Kalina Kancheva Kancheva.....	1067
MICROORGANISMS IN POOL WATER	1073
Slavica Ostojić Krsmanović.....	1073
Ljiljana Crnčević Radović	1073
Milenko Budimčić	1073
KINETIC AND EQUILIBRIUM STUDIES ON THE REMOVAL OF Mn^{2+} IONS FROM AQUEOUS SOLUTIONS BY PERLITE.....	1079
Viktorija Bezhovska.....	1079
Erhan Mustafa.....	1079
Kiril Lisichkov	1079
Stefan Kuvendziev	1079
Mirko Marinkovski	1079
Katerina Atkova	1079

USAGE OF INTERDENTAL BRUSHES IN EVERYDAY STUDENTS' ORAL HYGIENE

Cena Dimova

Faculty of medical science, "Goce Delcev" University, Stip, R. Macedonia

cena.dimova@ugd.edu.mk

Abstract: Introduction: The interdental spaces are the areas that are most frequently accumulated with dental plaque. The toothbrush, which is successful in removing plaque at buccal, lingual and occlusal surfaces, seems not to be completely successful in removing plaque at interdental sites. Interdental devices for oral hygiene are frequently recommended by dental professionals to patients in order to achieve a good dental and periodontal health. An **interdental brush** is a small brush, typically disposable, either supplied with a reusable angled plastic handle or an integral handle, used for cleaning between teeth and between the wire of dental braces and the teeth.

Aim: The aim of this study was to determinate the maintenance of oral hygiene and the use of interdental brush and to compare the use of an interdental brush and dental floss for controlling the dental biofilm around teeth of the Dental Medicine's students.

Material and Method: Eighty students of Dental Medicine aged 19 to 22 year were included in the study. The examinations were made twice: before enrolling the subject Prophylaxis of oral disease and after, in fourth semester and after in the next semester.

During the first thirty days, students used the conventional Bass method of brushing associated with cleaning the interproximal space only with dental tape. At the end of the semester, a new plaque index was measured. At the beginning of the next semester, the students were instructed to use conventional brushing, and then only interproximal cleaning with interdental brushes. At the end of this semester, a new plaque index was measured.

Results: The analysis revealed a significant difference in the effectiveness of the two cleaning methods used for controlling the interproximal biofilm, showing that the plaque index was significantly lower (24.3%) with the interdental brush than when dental floss was used. Evaluation was made how their attitude has been changed in maintaining oral hygiene after learning about prophylaxis of oral disease and oral health.

Conclusion: The results showed that the usage of interdental brushes is more effective at controlling the interproximal dental biofilm around teeth compared with using dental floss. Knowledge and training how to usage interdental cleaning products and devices for better oral health has important role in maintains oral hygiene and reduce the level of plaque around the teeth.

Keywords: interdental cleaning, interdental brush oral health, oral hygiene.

INTRODUCTION

Oral cleanliness is very important for the preservation of oral health as it removes microbial plaque, preventing it from accumulating on teeth and gingivae. There are several reasons for teeth brushing: to feel fresh and confident, to have a nice smile, and to avoid bad breath and disease (Choo *et al* 2001). The toothbrush, which is successful in removing plaque at buccal, lingual and occlusal surfaces, seems not to be completely successful in removing plaque at interdental sites. Namely, the interdental spaces are the areas that are most frequently accumulated with dental plaque. Interdental devices for oral hygiene are frequently recommended by dental professionals to patients in order to achieve a good dental and periodontal health. An interdental brush is a small brush, typically disposable, either supplied with a reusable angled plastic handle or an integral handle, used for cleaning between teeth and between the wire of dental braces and the teeth. There are different definitions in the scientific literature with respect to the of *approximal*, *interproximal*, *interdental*, and *proximal* sites. Commonly used indices are not suitable for assessing interdental plaque (directly under the contact area), and thereby limit interpretation of interdental plaque removal. The European Workshop on Mechanical Plaque Control in 1999 proposed the following definitions: *approximal* (proximal) areas are the visible spaces between teeth that are not under the contact area. The terms *interproximal* and *interdental* may be used interchangeably and refer to the area under and related to the contact point. Many different commercial products are designed to achieve this goal, including floss, woodsticks, rubber-tip simulators, interdental brushes, single-tufted brushes, and recently introduced electrically powered cleaning aids (i.e. oral irrigators). Interdental brushes were introduced in the 1960s as an alternative to woodsticks. The interdental brush consists of soft nylon filaments twisted into a fine stainless steel wire. This 'metal' wire can prove uncomfortable for patients with sensitive root surfaces. For such patients the use of plasticcoated metal wires may be recommended. The support wire is continuous or inserted into a metal/plastic handle. Interdental brushes are manufactured in different sizes and forms. The most common forms are cylindrical or conical/ tapered (like a Christmas tree). Slot et

al. [10] conducted a systematic review to evaluate the efficacy of IDBs and other interdental cleaning devices on plaque and parameters of periodontal inflammation. Regarding plaque, additional use of IDBs resulted significantly more plaque reduction compared to toothbrushing alone. Comparing IDB to dental floss, most of the studies revealed significant difference on plaque index parameter in favor of the IDB. Also, IDBs were detected to remove more plaque than woodsticks.

AIM

As dental health is vastly an individualized notion, the aim of this study is to prevent, control/arrest oral diseases. The knowledge and practices of dental students toward their oral health care reflect their understanding the importance of dental procedure and improving the oral health of their own, & their families. The aim of this study was to determinate the maintenance of oral hygiene and the use of interdental brush and to compare the use of an interdental brush and dental floss for controlling the dental biofilm around teeth of the Dental Medicine's students.

MATERIAL AND METHOD

A briefing was given about the nature of the study, and the procedure of completing the questionnaire was explained to every participant individually. Students who refused to participate in this research were excluded. Prior to fill the pre-designed questionnaire their consent was obtained. The study is part of the national University project named "Significance of proper oral hygiene for oral health condition of medical science students" at the Faculty of Medical Science, "Goce Delcev" University, Stip, Macedonia. Eighty students of Dental Medicine aged 19 to 22 year were included in the study. The examinations were made twice: before enrolling the subject Prophylaxis of oral disease and after, in fourth semester and after in the next semester.

During the first thirty days, students used the conventional Bass method of brushing associated with cleaning the interproximal space only with dental tape. At the end of the semester, a new plaque index was measured. At the beginning of the next semester, the students were instructed to use conventional brushing, and then only interproximal cleaning with interdental brushes. At the end of this semester, a new plaque index was measured.



RESULTS AND DISCUSSION

A total of 80 students of the 2nd year BDS class were surveyed. Out of 80 students, 36(45%) were boys and 44 (55%) were females as in Figure-1. The analysis revealed a significant difference in the effectiveness of the two cleaning methods used for controlling the interproximal biofilm, showing that the plaque index was significantly lower (24.3%) with the interdental brush than when dental floss was used (Table 1. and Fig. 2. Evaluation was made how their attitude has been changed in maintaining oral hygiene after learning about prophylaxis of oral disease and oral health. Dental students should be a good example of positive oral health attitudes and behavior to their families, patients and friends. In general, they have been found to be motivated about maintaining a good oral health. This study

showed that approximately 63% students knew what dental floss was effective in removing plaque. Interdental area is the most common site of plaque retention and the most inaccessible to toothbrushes; this could be complemented by the use of dental floss and interdental brushing daily.

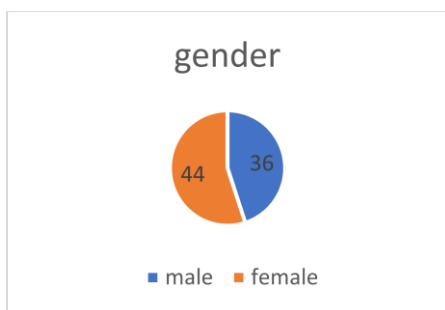


Table 1: Means and standard deviations of the plaque index according to the cleaning method used to control the interproximal biofilm

Interproximal biofilm	Mean	Standard Deviation	Maximum value	Minimum value
Cleaning method				
Interdental brush	44%	17%	8.5%	63%
Dental floss	63%	20%	24%	98.1%

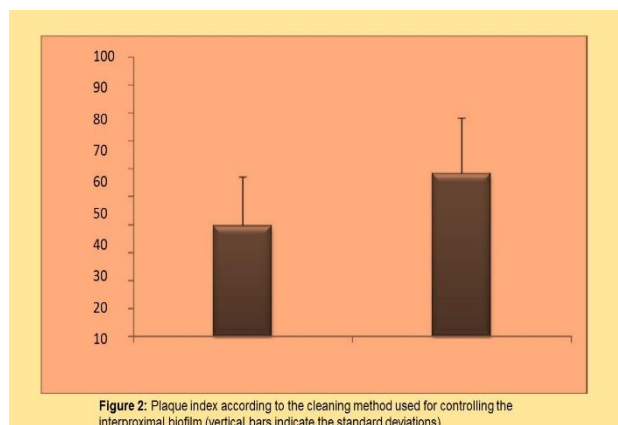


Figure 2: Plaque index according to the cleaning method used for controlling the interproximal biofilm (vertical bars indicate the standard deviations).

In present survey approximately 18.57% of the students used interdental brushes and dental floss; this was comparable to other medical students. Evidence in the literature suggests that there is a general lack of use of flossing and interdental brushing as a preventive measure by the various population of the world. Interdental brushes are shown to have a positive effect on parameters such as bleeding, plaque and pocket reduction. They are also superior to other manual interdental cleaning devices in subjects, who either suffered from periodontitis or were included in a maintenance program after periodontal treatment (Kiger et al. 1991, Christou et al. 1998, Jared et al. 2005, Jackson et al. 2006, Rösing et al. 2006). In a systematic

review based on nine articles, it was concluded that interdental brushes used as an adjunct to toothbrushing removed more plaque than just toothbrushing, and that dental floss and wood sticks are surpassed by interdental brushes in plaque removal. Zimmer et al (2006) compared the use of different oral hygiene devices/aids. The results showed there were no significant difference in plaque index or gingival bleeding index between using toothbrush alone and combined use of it with dental floss. Furthermore, the review showed a positively significant difference in using interdental brushes with respect to plaque scores, bleeding scores, and probing pocket depth, compared to other interdental cleaning devices.

CONCLUSION

Based on the available literature with respect to interdental cleaning, the best available data suggest the use of interdental brushes. These brushes should therefore be the first choice in patients with open interdental spaces. The findings from this study showed that a significant percentage of dental students recognize dental flossing and dental brushing as an essential interdental aid and agree that its routine use is necessary. The results showed that the usage of interdental brushes is more effective at controlling the interproximal dental biofilm around teeth compared with using dental floss. Knowledge and training how to usage interdental cleaning products and devices for better oral health has important role in maintains oral hygiene and reduce the level of plaque around the teeth.

ACKNOWLEDGEMENTS

Author declares no conflict of interest.

The study is funded by “Goce Delcev” University, Stip (as a part of the National University project named “Significance of proper oral hygiene for oral health condition of medical science students” at the Faculty of Medical Science).

REFERENCES

- [1] Bashiru, Braimoh Omoigberai, Ilochonwu Nzube Anthony. “Oral self-care practices among University students in Port Harcourt, Rivers State.” *Nigerian medical journal: Niger Med J.* 2014; 55: 486-489
- [2] Bennadi D, Halappa M, Kshetrimayum N. Self-reported knowledge and practice of inter dental aids among group of dental students, Tumkur, India. *J Interdiscip Dentistry* 2013; 3:159-62.
- [3] Bergenholtz A, Brithon J. Plaque removal by dental floss or toothpicks. An intra-individual comparative study. *Journal of Clinical Periodontology.* 1980;7(6):516-524.
- [4] Chapple IL, Van der Weijden F, Doerfer C, Herrera D, Shapira L, Polak D, et al. Primary prevention of periodontitis: Managing gingivitis. *Journal of Clinical Periodontology.* 2015;42(Suppl 16):S71-S76 .
- [5] Christou V, Timmerman MF, Van der Velden U, Van der Weijden FA. Comparison of different approaches of interdental oral hygiene: Interdental brushes versus dental floss. *Journal of Periodontology.* 1998;69(7):759-764.
- [6] Dagli RJ, Tadakamadla S, Dhanni C, Duraiswamy P, Kulkarni S. Self-reported dental health Attitude and behavior of dental students in India. *J Oral Sci* 2008; 50:267-72.
- [7] Doshi D, Baldava P, Anup N, Sequeira PS. A comparative evaluation of self-reported oral hygiene practices among medical and engineering University students with access to health-promotive dental care. *J Contemp Dent Pract.* 2007 Jan 1;8(1):68-75.

-
- [8] Galgut PN. The need for interdental cleaning. *Dental Health (London)*. 1991;30(5):8-11
- [9] Gluch JJ. As an adjunct to tooth brushing, interdental brushes (IDBs) are more effective in removing plaque as compared with brushing alone or the combination use of tooth brushing and dental floss. *The Journal of Evidence-Based Dental Practice*. 2012;12(2):81-83
- [10] Hoenderdos NL, Slot DE, Paraskevas S, Van der Weijden GA. The efficacy of woodsticks on plaque and gingival inflammation: A systematic review. *International Journal of Dental Hygiene*. 2008;6(4):280-289.
- [11] Jabeen C, Umbreen G. Oral Hygiene: Knowledge, Attitude and Practice among School Children, Lahore. *J Liaquat Uni Med Health Sci*. 2017;16(03):176-80. doi: 10.22442/jlumhs.171630529.
- [12] Kocovski D, Toneva V, Dimova C, Zlatanovska K, Naskova S. Oral Hygiene Level Maintenance of Dental Medicine Students. *Journal of Hygienic Engineering and Design*. Vol.20.pp 75-81.
- [13] Naematollahi H, Ebrahim M. Oral health behaviour and determinant in a group of Iranian students. *Ind J dent Res* 2010; 21:84-8.
- [14] Noorlin I, Watts TL. A comparison of the efficacy and ease of use of dental floss and interproximal brushes in a randomised split mouth trial incorporating an assessment of subgingival plaque. *Oral Health & Preventive Dentistry*. 2007;5(1):13-18.
- [15] Rajpar SP, Banglani MA, Punjabi SK, Priya. Dental floss; concept and use among the undergraduate dental students. *Professional Med J* 2016;23(11):1364-1367. DOI: 10.17957/TPMJ/16.3608.
- [16] Schmage P, Platzner U, Nergiz I. Comparison between manual and mechanical methods of interproximal hygiene. *Quintessence International*. 1999;30(8):535-539.
- [17] Silness J, Loe H. Periodontal disease in pregnancy. II. Correlation between oral hygiene and periodontal condition. *Acta Odontologica Scandinavica*. 1964;22:121-135.
- [18] Slot DE, Dörfer CE, Van der Weijden GA. The efficacy of interdental brushes on plaque and parameters of periodontal inflammation: A systematic review. *International Journal of Dental Hygiene*. 2008;6(4):253-264.
- [19] Tu YK, Jackson M, Kellett M, Clerehugh V. Direct and indirect effects of interdental hygiene in a clinical trial. *Journal of Dental Research*. 2008;87(11):1037-1042.
- [20] Tucker R. Do woodsticks work? *Evidence-Based Dentistry*. 2009;10(2):43.
- [21] WHO. "Health topics: Oral health". [cited 2015 December]; Available from: http://www.who.int/topics/oral_health/en/.
- [22] Yost KG, Mallatt ME, Liebman J. Interproximal gingivitis and plaque reduction by four interdental products. *J Clin Dent* 2006;17:79-83.
- [23] Zimmer S, Kolbe C, Kaiser G, Krage T, Ommerborn M, Barthel C. Clinical efficacy of flossing versus use of antimicrobial rinses. *J Periodontol* 2006;77:1380–1385.